

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1                   1.     (Currently amended) A computer system with a storage system having  
2 reconfigurable logical volumes comprising:  
3                   ~~at least one computer~~ a plurality of computers;  
4                   a storage ~~system~~ operatively coupled to said computers and comprising having a  
5 ~~logical volume which can be used by the computer~~ a plurality of inner logical volumes and an  
6 LU controller to control said inner logical volumes; and  
7                   ~~a control utility for instruction a change in a logical volume of the storage~~  
8 management console to communicate instructions to change a logical volume configuration of  
9 said logical volumes,  
10                  ~~wherein said computer has logical volume recognizing means for recognizing a~~  
11 ~~construction change in the logical volume in said storage,~~  
12                  ~~said storage has logical volume control means for controlling the construction of~~  
13 ~~the logical volume, and~~  
14                  ~~the logical volume control means has a logical volume number map describing~~  
15 ~~logical volume construction information.~~  
16                  said LU controller comprising an LUN map designating a correlation among an  
17 outer LUN, one or more inner LUNs, and a computer ID, said outer LUN designating an outer  
18 logical volume that can be accessed by one of said computers, each of said inner LUNs  
19 designating one of said inner logical volumes whereby said outer logical volume can be  
20 associated with one or more of said inner logical volumes, said computer ID designating one of  
21 said computers,  
22                  wherein in response to receiving an instruction to change said logical volume  
23 configuration, said LU controller is configured such that it modifies said LUN map to correlate a  
24 first outer LUN and a first computer ID with a second inner LUN, said first outer LUN and said

25 first computer ID being previously correlated with a first inner LUN, wherein a computer  
26 designated by said first computer ID detects a change in said logical volume configuration so  
27 that said computer can subsequently access an inner logical volume designated by said second  
28 inner LUN by way of said first outer LUN.

2 - 13. (Canceled)

1 14. (New) A computer system of claim 1, wherein each of said plurality of  
2 computers searches an outer logical volume by using an outer LUN.

A<sub>1</sub> 1 15. (New) A computer system of claim 1, wherein said outer logical volume  
2 designated by said first outer LUN is expanded into a storage area including inner logical  
3 volumes designated by said first inner LUN and said second inner LUN.

1 16. (New) A computer system of claim 15, wherein said instruction to change  
2 a logical volume configuration includes said first inner LUN and said second inner LUN.

1 17. (New) A computer system of claim 1,  
2 wherein said instruction to change a logical volume configuration includes said  
3 first LUN and a requested size,  
4 said storage system and said LU controller configured such that if a free storage  
5 area having a size larger than the sum of said requested size and the size of an inner logical  
6 volume designated by said first LUN exists in said storage system, then said storage system  
7 copies data stored in said inner logical volume to said free storage area and said LU controller  
8 rewrites said LUN map to correlate said free storage area with said second inner LUN and to  
9 correlate said second inner LUN with said first outer LUN and with said first computer ID.

1 18. (New) A computer system of claim 1,  
2 wherein said instruction to change a logical volume configuration includes said  
3 first LUN and a requested size,

4                    wherein said LU controller is configured such that if a free storage area exists  
5                    which has a size that is larger than said requested size plus the size of said inner logical volume  
6                    designated by said first inner LUN, then said LU controller copies data stored in said inner  
7                    logical volume designated by said first inner LUN to said free storage area, and rewrites said  
8                    LUN map to correlate said free storage area with said first outer LUN, with said first computer  
9                    ID, and with said second inner LUN, said second LUN being associated with said free storage  
10                   area,

11                   wherein said LU controller is further configured such that if such a free storage  
12                   area does not exist in said storage system, then said LU controller rewrites said LUN map to  
13                   correlate said first outer LUN with said logical volume designated by said first LUN and with  
14                   any free storage area in said storage system.

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